

Carnation Wastewater Treatment Facility

FINAL ENVIRONMENTAL IMPACT STATEMENT Addendum

November 2006



Wastewater Treatment Division
Department of Natural Resources and Parks
King Street Center, KSC-NR-0500
201 South Jackson Street
Seattle, WA 98104-3855

November 15, 2006

TO: Recipients of Carnation Wastewater Treatment Facility Final EIS

FM: Shirley Marroquin, Supervisor, Environmental Planning and Community Relations

RE: Addendum to Carnation Wastewater Treatment Facility Final EIS

The King County Wastewater Treatment Division is issuing an Addendum to the Final Environmental Impact Statement (EIS) for the Carnation Wastewater Treatment Facility (issued October 2004). This addendum has been prepared in compliance with the State Environmental Policy Act (SEPA) (RCW 43.21C), the SEPA Rules (WAC 197-11), and Chapter 20.44 King County Code.

This Addendum to the Final EIS provides additional new information on the following topics related to the proposed wetland discharge component of the project:

- Location of the wetland discharge,
- Scope of the wetland discharge.

The impacts evaluated in this Addendum are within the range of significant adverse environmental impacts previously analyzed in the Carnation Wastewater Treatment Facility EIS, and this addendum does not substantially change that analysis (see WAC 197-11-600). Consistent with the SEPA (WAC 197-11-625), King County is sending this addendum documenting new information to recipients of the Final EIS including affected agencies and members of the public. This information may assist affected agencies, and provide useful information to other agencies and the public. There is no comment period for the addendum.

If you do have questions or need further information on the project, please do not hesitate to contact Steve Tolzman, Environmental Planner at (206) 263-6185 or steve.tolzman@metrokc.gov.

Final Environmental Impact Statement
Addendum

for the

Carnation Wastewater Treatment Facility

November 2006

Prepared in compliance with the State Environmental
Policy Act (SEPA) (RCW 43.21C), the SEPA Rules
(WAC 197-11), and Chapter 20.44 King County Code.

This information is available in accessible formats upon request at
206-684-1280 (voice) or 711 (TTY).



King County

Department of Natural Resources and Parks

Wastewater Treatment Division

King Street Center, KSC-NR-0505

201 South Jackson Street

Seattle, WA 98104

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Chapter 1

1.1 Introduction

On October 15, 2004 King County Wastewater Treatment Division issued a Final Environmental Impact Statement (Final EIS) analyzing the probable significant adverse impacts of the Carnation Wastewater Treatment Facility. This addendum to the Final EIS provides additional information on the following topics related to the proposed incorporation of a wetland discharge into the project:

- Location of the wetland discharge,
- Scope of the wetland discharge.

1.2 Purpose of Addendum

Under the State Environmental Policy Act (SEPA), issuance of an addendum is appropriate to provide additional information or analysis that does not substantially change the analysis of significant impacts and alternatives in an existing environmental document (WAC 197-11-600[4][c] and 706). Since issuance of the Carnation Wastewater Treatment Facility Final EIS, additional information has become available. This information may assist regulatory agencies in their review of the proposed wetland discharge, and provide useful information regarding this proposed modification of the project to other agencies and the public. It does not substantially change the analysis of significant impacts and alternatives in the Final EIS.

Chapter 2

2.1 Introduction

The Final EIS issued in October 2004 evaluated three discharge alternatives: upland discharge, river outfall and wetlands enhancement. Based on the environmental review and cost considerations, the upland discharge alternative was eliminated from further consideration. King County decided to carry forward both the river and wetland discharge alternatives for more study. The river outfall is a proven technology and is lower cost than the wetlands alternative. However, the wetlands enhancement alternative offers a use of reclaimed water produced by the plant. The wetlands alternative was not selected outright because of cost considerations. Preliminary estimates showed that the wetlands alternative, including wastewater treatment plant modifications to produce Class A reclaimed water would have cost approximately \$2.5 million more than the river outfall. Since the Final EIS was issued County staff have worked to identify an alternative wetland enhancement location that is closer to the treatment plant and to secure grants to make the wetlands enhancement an environmental amenity as well as an economically viable alternative. This has led to refinements and modifications in the wetland discharge as originally presented in the Final EIS.

2.2 Project Description

The Final EIS evaluated the potential for a wetland discharge at Stillwater Wildlife Area. The cost of piping reclaimed water more than 15,000 feet to Stillwater Wildlife Area was estimated at more than \$1 million. In order to reduce the cost of the wetland discharge the project team considered wetland enhancement locations closer to the treatment plant to avoid the additional conveyance cost associated with the Stillwater location. The Chinook Bend Natural Area emerged as the preferred wetland discharge location. The Chinook Bend Natural Area is located adjacent to the river outfall site at the Carnation Farm Road Bridge approximately one mile north of the City of Carnation in unincorporated King County (Figure 1). The 59-acre property is owned by King County and managed as an open space and habitat protection area by the Water and Land Resources Division in the Department of Natural Resources and Parks. A wetland discharge utilizing reclaimed water to enhance an existing wetland area is consistent with the goals for the site established in the Chinook Bend Site Management Guidelines (King County, 2003).

Since the Final EIS was issued a formal partnership has been developed between King County and Ducks Unlimited (DU) to help complete the wetland discharge project. DU is a non-profit corporation dedicated to wetland conservation. DU is providing environmental engineering and wetland enhancement expertise to help design the wetland discharge and implement the wetland enhancement work.

The wetland discharge concept for the Chinook Bend Natural Area is similar to that discussed in the Final EIS for the Stillwater Wildlife Area. The Chinook Bend proposal is to enhance an existing wetland area in the southwest portion of the site adjacent to the Carnation Farm Road by:

- Adding up to 0.4 million gallons per day (MGD) or 0.6 cubic feet per second (cfs) of reclaimed water to increase the wetland size,
- “Daylighting” the water flowing out of the wetland by abandoning a pipe currently draining the wetland, and
- Managing invasive plant species to reduce or eradicate their presence in the wetland area (Figure 2).

The existing wetland area to be enhanced is an open water wetland area approximately 1 to 2 acres in size depending upon the season of the year. The wetland displays many of the characteristics of a Category IV wetland as defined by the King County Critical Areas Ordinance (KCC Chapter 21A.24). Category IV wetlands are characterized by the lowest levels of wetland functions and are often heavily disturbed from their natural state. These are wetlands that in some cases can be improved (Hruby, 2004).

The proposal is to add reclaimed water to the wetland, increasing the open water area to approximately 4 acres. Currently water flows through the wetland from south to north. Consistent with this natural drainage pattern, reclaimed water would be released into the wetland at the south end through a diffuser (Figures 2 and 3). River cobble would be placed around the diffuser to minimize the potential of reclaimed water scouring of the soils. Reclaimed water leaving the diffuser would either flow over the ground surface or shallow subsurface to the wetland. During heavy rain and/or flood events it is possible that the open water wetland area could expand over the diffuser and reclaimed water would be released directly into the wetland.

To re-establish the natural drainage pattern, the pipe that currently drains the wetland and discharges to the Snoqualmie River would be abandoned (Figure 2). A fish passable water control structure would be placed at the current pipe inlet location at the north end of the wetland. Water flowing through the wetland would pass through the water control structure and flow overland following its natural drainage course to the Snoqualmie River.

The primary purpose of the water control structure is to provide the ability to control invasive plant species by impounding and drawing down water in the wetland. Planting of native wetland and riparian plant species would also be done to reduce invasive plant species.

Some minor earthwork would be required to install the water control structure and the 8-inch pipe and diffuser delivering reclaimed water to the wetland. Earthwork may also be necessary to create a wetland with sinuous shoreline areas and a variety of depths. Excavation would be done with standard backhoes and dump trucks. Adequate road access to the site already exists, so no new roads would need to be built to complete the required earthwork.

Project elements would be designed and constructed by either DU or the King County Wastewater Treatment Division. DU would install the water control structure, complete any earthwork on wetland shorelines, and plant native wetland and riparian species. DU anticipates a 4-week construction period during the second half of 2007 will be needed to complete this work. The King County Wastewater Treatment Division’s role is to design and construct a pipe extension from the river outfall at the Carnation Farm Road Bridge to the wetland discharge. The pipe is expected to be approximately 400 to 700 feet in length and terminate in a diffuser described above. The location of the pipe extension and diffuser will be determined in final

design. It is expected that the pipe extension alignment will be either in or adjacent to NE Carnation Farm Road (Figure 2). The diffuser is expected to be either incorporated into the stormwater drainage pipe under NE Carnation Farm Road or placed immediately adjacent to the road in Chinook Bend Natural Area. King County anticipates a 10-week construction period during the second half of 2007 will be required for installation of the pipe extension and diffuser.

Under the current schedule, operation of the wetland discharge will begin in the second half of 2008. The wetland discharge would then become the primary discharge location for reclaimed water from the Carnation Wastewater Treatment Facility. The river outfall at the Carnation Farm Road Bridge would remain operational but only be used on a limited basis. For example, the river outfall may be used when maintenance or equipment problems at the treatment plant prevented the facility from producing Class A Reclaimed Water. In this case, the highly treated water would be discharged to the Snoqualmie River via the river outfall. The river outfall and wetland discharge would operate under both a NPDES General Permit and a Reclaimed Water Waste Discharge Permit. Water quality standards under each of these programs would also be applicable to the river outfall and wetland discharge.

Monitoring and maintenance procedures for the wetland discharge would also be in accordance with the NPDES General Permit Coverage and Reclaimed Water Waste Discharge Permit. Some of the potential permit requires are:

- Monitoring of the quantity and quality of reclaimed water entering the wetland,
- Monitoring the quantity and quality of the plants and animals in and around the wetland,
- Maintenance of native wetland and riparian plant species.

2.3 Areas of Potential Impact and Proposed Mitigation

This section of the addendum contains a discussion of impacts and mitigation measures organized by SEPA element of the environment. Note, only elements of the environment for which changes in the project description have resulted in changes to the impact analysis and mitigation measures for that element as presented in the Final EIS are included.

2.3.1 Earth

2.3.1.1 Construction Impacts

Anticipated earth impacts associated with the changes to the project description are similar to those described in Chapter 4 of the Final EIS and are not significant. The maximum elevation at the Chinook Bend site is approximately 67 feet above sea level and the minimum is approximately 45 feet above sea level. The Soil Survey, King County Area, Washington (Snyder et al, 1973) maps soils within the Chinook Bend site boundaries as Puget silty clay loam, riverwash and Oridia silt loam. The amount of clearing and grading associated with the wetland discharge has been reduced from 6 to 8 acres described in the Final EIS to less than 2 acres. Excavation of 4,000 cubic yards was used as a conservative estimate to implement the wetland

discharge at the Stillwater Wildlife Area for the Final EIS. In comparison, excavation of 650 cubic yards is anticipated for the discharge at Chinook Bend. Potential construction impacts associated with erosion, contaminated soils, and accidental spills reported in the Final EIS are the same for either wetland discharge location.

2.3.1.2 Operation Impacts

Operation impacts for the Chinook Bend wetland discharge are the same as those discussed in Chapter 4 and Sections 4.2.1, 4.2.3, and 4.2.2 of the Final EIS.

2.3.1.3 Proposed Mitigation

Construction and operation mitigation measures for the Chinook Bend wetland discharge are the same as those discussed in Chapter 4 and Sections 4.2.1, 4.2.3, and 4.2.2 of the Final EIS.

2.3.2. Water Resources

2.3.2.1 Construction Impacts

The wetland discharge at Chinook Bend would involve less construction work in the vicinity of existing water resources than that discussed in Chapter 6 of the Final EIS for the Stillwater Wildlife Area location. This is because two streams, Harris Creek and an Unnamed Creek, flow through Stillwater Wildlife Area while the wetland proposed for enhancement is the only water feature on the Chinook Bend site. The reduced quality and quantity of water features at Chinook Bend in comparison to Stillwater Wildlife Area generally decrease the construction water resource impacts associated with in-water work including erosion and accidental spills, to below the levels discussed in Chapter 6 and Sections 6.2.3, 6.2.4, and 6.3 of the Final EIS.

2.3.2.2 Operation Impacts

Operation impacts for the Chinook Bend wetland discharge are the same as those discussed in Chapter 6 and Sections 6.2.3, 6.2.4, and 6.3 of the Final EIS.

2.3.2.3 Proposed Mitigation

Construction and operation mitigation measures for the Chinook Bend wetland discharge are the same as those discussed in Chapter 6 and Sections 6.2.3, 6.2.4, and 6.3 of the Final EIS.

2.3.3 Biological Resources

2.3.3.1 Construction Impacts

Construction impacts associated with a wetland discharge at the Chinook Bend site are similar to and less than those discussed in Chapter 7 of the Final EIS.

The majority of the Chinook Bend Natural Area is a former cow pasture, vegetated mostly with pasture grasses. The vegetation composition of the existing wetland area in the southwest corner

of the site consists mainly of a large patch of reed canary grass and soft rush (King County, 2003). A riparian forest area is found on the northeast corner of Chinook Bend Natural Area.

The wetland proposed for enhancement is the only mapped or inventoried wetland on the Chinook Bend Natural Area. The wetland is in the southwest portion of the site adjacent to the Carnation Farm Road and approximately 3-acres in size. About one-half of the wetland is open water (King County, 2003). This wetland displays many of the characteristics of a Category IV wetland as defined by the King County Critical Areas Ordinance (KCC Chapter 21A.24). These characteristics include having the lowest levels of wetland functions and are often heavily disturbed from their natural state (Hruby, 2004).

Wetlands at the Stillwater Wildlife Area are described in Chapter 7 Section 7.1.4.2 of the Final EIS. These wetlands are of higher quality to the wetland area at Chinook Bend Natural Area displaying many of characteristics of King County Critical Areas Ordinance Category I – III wetlands such as possessing relatively undisturbed ecological attributes that are difficult to replace and provide high levels of some wetland functions (Hruby, 2004).

The wetland on the Chinook Bend Site is not readily accessible to fish as it is separated from the river by an approximately 500-foot long 10-inch diameter pipe that drains from the north end of the wetland. Access into and out of the wetland by anadromous fish is nearly prevented by this pipe. Fish can only enter the wetland during flooding events when the wetland is inundated by river water. It is possible that warm water fish species, such as stickleback, do inhabit the wetland. No inventory has been done to verify the presence or absence of fish in the wetland. This condition is in contrast to the Stillwater Wildlife Area where two main streams are used by a variety of anadromous fish species as reported in Chapter 7 Section 7.1.4.2 of the Final EIS.

Since the Chinook Bend site wetland is of lesser ecological value and anadromous fish are not present in the vicinity, then it follows that the impacts to biological resources are reduced to a level below those discussed in the Final EIS for the Stillwater Wildlife Area. In addition, the opportunity of “Daylighting” the water draining from the Chinook Bend wetland will result in creation of new, and enhancement of existing aquatic and riparian habitat, improve wetland functions, and will yield an environmental benefit.

Chinook Bend Natural Area provides habitat for a variety of resident and migratory birds species. An active Bald Eagle nest is located within a grove of cottonwoods on the northern portion of the Chinook Bend site. Both breeding-resident and wintering-migrant bald eagles are present in the project area (King County, 2003).

Generally, Chinook Bend Natural Area offers significant habitat for a variety of mammalian wildlife, especially those species that thrive in clearings or at the forest edge. Blacktail deer are abundant on the site. The existence of coyote scat indicates that coyote frequent the site. It is also suspected that cougar, black bear, and bobcat use the site. Raccoons are believed to exist along the river’s edge along with aquatic species such as beaver, river otter, muskrat and mink. Small mammals such as shrews, mice, voles, squirrels and weasels most likely exist on the site. Amphibians and reptiles are believed to inhabit the wetland areas. However, no inventory of mammalian wildlife has been conducted (King County, 2003).

Construction impacts to birds and mammals are as reported in Chapter 7 Sections 7.2.2, 7.2.3, and 7.3 of the Final EIS.

2.3.3.2 Operation Impacts

Operation impacts are similar to those discussed in Chapter 7 Sections 7.2.2, 7.2.3, and 7.3 of the Final EIS. The beneficial impacts to biological resources at the Chinook Bend site are expected to be greater than those discussed in Chapter 7 of the Final EIS for the Stillwater Wildlife Area. As described in the construction impacts discussion above, the wetland system at Chinook Bend is generally considered of lesser habitat value than those systems at Stillwater Wildlife Area. The portion of the Chinook Bend wetland discharge proposal that involves “daylighting” the water flowing out of the wetland will likely provide additional aquatic and riparian habitat. Also, the wetland discharge at Chinook Bend will minimize to the greatest extent possible use of the river outfall. Limiting use of the river outfall minimizes its potential impacts such as disruption of salmon spawning areas in the Snoqualmie River in the vicinity of the Carnation Farm Road Bridge.

2.3.3.3 Proposed Mitigation

Construction and operation mitigation measures for the Chinook Bend wetland discharge are the same as those discussed in Chapter 7 Sections 7.2.2, 7.2.3, and 7.3 of the Final EIS.

2.3.4 Recreation

2.3.4.1 Construction Impacts

Recreation construction impacts at the Chinook Bend wetland discharge site would be less than those at the Stillwater Wildlife Area. As reported in Chapter 11 of the Final EIS, Stillwater Wildlife Area provides the public with opportunities to hunt, fish, and train hunting dogs. The Snoqualmie Valley Trail, a 36-mile trail for non-motorized use, traverses the eastern portion of the Wildlife Area. The Chinook Bend site offers the public opportunities to fish, bird watch, and hike through the 59-acre natural area. Impacts to these recreational activities at Chinook Bend associated with the wetland discharge are expected to be similar to those identified in Chapter 11 of the Final EIS with the exception of disruptions to the Snoqualmie Valley Trail. The Chinook Bend project site is located on the opposite side of the river from the Snoqualmie Valley Trail and therefore no impacts to the trail would result from this proposal.

2.3.4.2 Operation Impacts

Operation impacts for the Chinook Bend wetland discharge are the same as those discussed in Chapter 11 Sections 11.2.1, 11.2.2, 11.2.3, 11.2.4, and 11.3 of the Final EIS.

2.3.4.3 Proposed Mitigation

Construction and operation mitigation measures for the Chinook Bend wetland discharge are the same as those discussed in Chapter 11 Sections 11.2.1, 11.2.2, 11.2.3, 11.2.4, and 11.3 of the Final EIS.

2.3.5 Cultural Resources

2.3.5.1 Construction Impacts

No known archaeological resources (prehistoric and historic), Ethnographic Places, or Above-Ground Historic Resources are located on the site (Sundberg, personal communication, 2006). No structures exist on the Chinook Bend site. Historically, Carnation Farm used Chinook Bend for grazing.

Extending the reclaimed water conveyance pipe to Chinook Bend would require work on the Stossel Bridge (Carnation Farm Road Bridge). The bridge is designated as a King County Landmark and is on the Washington State Historic Register. The bridge is also eligible for inclusion in the National Register of Historic Places. The Final EIS discussed installing the river outfall pipe on the bridge. Use of the bridge for the river outfall pipe has already been reviewed and approved by the King County Historic Board Design Review Committee. Extending the reclaimed water conveyance pipe across the bridge as required to implement the wetland discharge at Chinook Bend would require additional design review and approval by this committee.

2.3.5.2 Operation Impacts

Operation impacts for the Chinook Bend wetland discharge are the same as those discussed in Chapter 13 Sections 13.2.1, 13.2.2, 13.2.3, and 13.3 of the Final EIS.

2.3.5.3 Proposed Mitigation Measures

In addition to King County Historic Board Design Review Committee review of the reclaimed water conveyance pipe, other construction and operation mitigation measures identified in Chapter 13 Sections 13.2.1, 13.2.2, 13.2.3, and 13.3 of the Final EIS would apply to the Chinook Bend wetland discharge.

2.3.6 Transportation

2.3.6.1 Construction Impacts

The access roads to Chinook Bend Natural Area are from NE Carnation Farm Road. This access is different from the routes described in the Final EIS to access the Stillwater Wildlife Area. The Final EIS provided a description of the existing street system surrounding the river outfall site adjacent to Chinook Bend. NE Carnation Farm Road is identified as a minor arterial that connects directly into SR 203, a principal arterial north of the Carnation city limits.

If extension of the reclaimed water conveyance pipe is within the right of way of NE Carnation Farm Road, the road would be temporarily disturbed to excavate a trench and install the pipe. After the pipe is in place, the roadway would be restored to preconstruction conditions. Since the Chinook Bend Natural Area wetland discharge requires less clearing and grading, construction truck trips and associated impacts are anticipated to be the same as or less than reported for the wetland discharge at the Stillwater Wildlife Area in Chapter 14 Sections 14.2.1, 14.2.2, 14.2.3, and 14.3 of the Final EIS.

2.3.6.2 Operation Impacts

Operation impacts for the Chinook Bend wetland discharge are the same as those discussed in Chapter 14 Sections 14.2.1, 14.2.2, 14.2.3, and 14.3 of the Final EIS.

2.3.6.3 Proposed Mitigation Measures

Construction and operation mitigation measures for the Chinook Bend wetland discharge are the same as those discussed in Chapter 14 Sections 14.2.1, 14.2.2, 14.2.3, and 14.3 of the Final EIS.

2.4 Summary of Impacts and Mitigation

Table 1 summarizes impacts and mitigation measures presented in this addendum.

Table 1. Summary of Impacts and Mitigation Measures

Element of the Environment	Impact	Mitigation
Earth	The amount of clearing and grading has been modified from 6 to 8 acres to less than 2 acres. Soil excavation has been reduced from an estimated 4,000 to 650 cubic yards.	Same as Final EIS.
Water Resources	The new wetland discharge at Chinook Bend Natural Area avoids potential impacts to streams discussed in Chapter 6 of the Final EIS.	Same as Final EIS.
Biological Resources	The extent of work in wetland areas has been reduced. Construction will occur at a greater distance from fish bearing stream areas than reported in Chapter 7 of the Final EIS. The wetland discharge will minimize use of the river outfall and its potential impacts to salmon.	Same as Final EIS.
Recreation	No impacts to the Snoqualmie Valley Trail or users of the Stillwater Wildlife Area will occur. Impacts to recreational users at the Chinook Bend Natural Area will be similar to those described in Chapter 11 of the Final EIS.	Same as Final EIS.
Cultural Resources	Extending the reclaimed water conveyance pipe to Chinook Bend would require work on the Stossel Bridge (Carnation Farm Road Bridge). The bridge is a King County Historic Landmark and listed on the Washington Historic Register.	Extending the reclaimed water conveyance pipe would require review and approval by the King County Historic Board Design Review Committee.
Transportation	The reduction in clearing and grading amounts will result in fewer construction truck trips than reported for the wetland discharge at the Stillwater Wildlife Area in Chapter 14 of the Final EIS.	Same as Final EIS.

References

Hruby, T. 2004. Washington State wetland rating system for western Washington – Revised. Washington State Department of Ecology Publication # 04-06-025.

King County. 2003. Chinook Bend Natural Area, Site Management Guidelines. King County Department of Natural Resources and Parks, Water and Land Resources Division. Seattle, Washington.

Snyder, D.E. et. al. 1973. Soil Survey of King County Area, Washington. U.S. Department of Agriculture, Soil Conservation Service, Washington D.C.

Sundberg, C. 2006. Personal communication between Charlie Sundberg, Preservation Planner, King County Historic Preservation Program and Steve Tolzman, Environmental Planner, King County Wastewater Treatment Division. July 19, 2006.

Figures

Figure 1. Vicinity Map

Figure 2. Chinook Bend Natural Area Wetland Enhancement Concept

Figure 3. Conceptual Cross-Section of Reclaimed Water Diffuser